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Article XXXIV.— DESCRIPTIONS OF SEVEN NEW SPECIES OF TURTLES FROM THE TERTIARY OF THE UNITED STATES.

By Oliver P. Hay.

Plate LIV and 20 Text-figures.

The writer here presents descriptions of seven fossil turtles, all of which appear to have been hitherto unknown. One of these is an alligator snapper, the scanty remains of which were found in what are regarded as Pliocene deposits, on the western coast of Florida. This turtle was about the size of the alligator snapper, *Macrochelys temmincki*, which now inhabits the region from western Georgia to Texas. In structure the fossil species is quite distinct from its modern representative. Another interesting species is a new box-tortoise which was found in Pliocene or early Pleistocene deposits near Savannah, Georgia, and which exceeded in size any living species of box-tortoise.

A new and beautifully sculptured species of *Plastomenus* comes from the Basal Eocene, probably from the Torrejon beds, of New Mexico. A fine large soft-shelled turtle of the genus *Aspideretes*, was found in the Cope collection of fossil reptiles, having been labeled by Professor Cope as *Trionyx* and as coming from the Upper Puerco (Torrejon) of New Mexico. This is one of the best preserved turtles known and, excepting *Conchochelys admirabilis*, furnishes the oldest known skull of the family. There is also a new species of *Plastomenus* from the Basal Eocene. Finally, three Eocene species of the genus *Platypeltis* are described, a genus represented today by several species that inhabit the rivers of North America east of the Rocky Mountains.

Macrochelys floridana sp. nov.

Figs. 1–4.

Four peripheral bones found in the Jarman collection of fossils made in Hillsborough County, Florida, and now the property of Vanderbilt University, Nashville, Tennessee, indicate a hitherto undescribed species of alligator snapper, to which the above name is given. These bones were accompanied by those of various other turtles, among them *Testudo crassi-*

scutata, and species as yet undescribed, and by bones of a horse and plates of *Chlamytherium humboldti*. The deposits appear to belong to what are known as the Peace Creek beds.

It is probable that these peripherals belong to as many individuals. One of these bones is the fourth peripheral of the left side; another is the seventh of the right side; a third, the seventh of the left side; the fourth, the ninth of the right side. These bones have been carefully compared with the corresponding bones of an excellent skeleton of *Macrochelys temmincki* and found to be quite distinct.

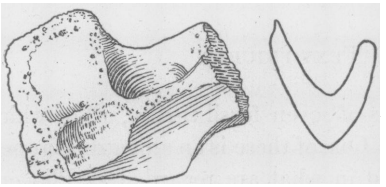


Fig. 1. *Macrochelys floridana* Hay. Fourth left peripheral seen from below. Presents a pit for second costal and an excavation for the hypoplastron. On the right is a section across the bone about the middle of its length. × ⅔.

The fourth peripheral (Fig. 1) is 46 mm. long; its greatest height is 34 mm.; its thickness, 21 mm. The upper and the lower faces are moderately convex and they meet to form a free border which is subacute anteriorly, but more obtuse posteriorly. The inner face contains a large nearly circular pit for the end of the rib of the second costal. This pit is mostly in the anterior half of the face. Below and behind the pit is an excavation for the outer anterior angle of the hyoplastron. This excavation is 18 mm. long. On the upper face are seen the costomarginal sulcus and that between the fourth and fifth marginal scutes. The former runs near the upper border of the bone. The latter ascends between the middle and posterior thirds of the length of the bone. The upper border of the bone has the portion behind the pit thickened, as if it had articulated suturally with the costal; but this is not certain. The remainder of the border is thin and sharp.

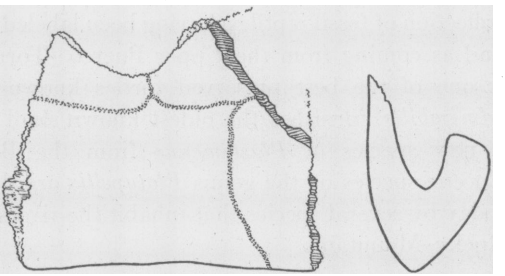


Fig. 2. *Macrochelys floridana* Hay. Right seventh peripheral, seen from above. On the right is a section across the bone about the middle of the length. × ⅔.

In *M. temmincki* this bone has the upper face much more convex and it rounds into the lower face so that the keel is hardly perceptible. The pit for the rib is nearer the hinder end of the bone and there is no excavation for the hyoplastron, the latter bone coming forward just to its hinder end.

The larger seventh peripheral (Figs. 2, 3) of the fossil species has a length of 60 mm. along the free border, a maximum thickness of 25 mm., and a

height of 50 mm.; but as the anterior end of the upper border has been broken away, the height may have been slightly greater. At the posterior end the height is 48 mm. The free border is distinctly acute. From this the upper and the lower borders ascend with slight convexity. On the upper face the sulcus between the seventh and eighth marginals ascends between the third and fourth quarters of the length of the bone. The costomarginal sulcus runs in a nearly straight line about 32 mm. above the free border. The sulcus between the second and third costal scutes ascends about the middle of the length of the bone. The pit for the fifth rib is in the hinder half. Below and in front of this pit is an excavation 32 mm. long for the outer hinder angle of the hypoplastron. The upper border of the bone, so far as present, shows that it articulated strongly by a jagged suture with the lower border of the fifth costal.

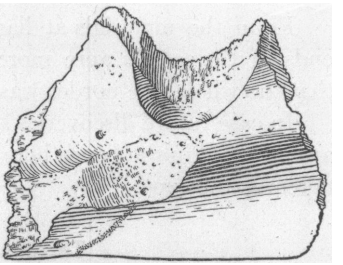


Fig. 3. *Macrochelys floridana* Hay. Right seventh peripheral seen from below. Presents pit for the fifth rib and an excavation for the hypoplastron. × ⅔.

The corresponding bone in *M. temmincki* has the pit for the rib and the excavation for the hypoplastron similarly placed. It differs from that of *M. floridana* in having a much more obtuse free border, but especially in not having been in contact with the costal. In the specimen examined there is a fontanel between the costal and the peripheral from 10 mm. to 23 mm. in height. On the upper face the ascending sulcus is not so near the anterior end of the bone as in *M. floridana.* The costomarginal sulcus on the anterior half of the bone is about halfway between the upper and the lower border, but it suddenly descends to near the lower border.

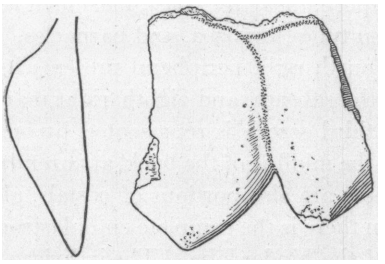


Fig. 4. *Macrochelys floridana* Hay. Right ninth peripheral seen from above, with section taken across the hinder end. × ⅔.

The other seventh peripheral belonged to a smaller individual and offers no additional data.

The ninth peripheral (Fig. 4) is 48 mm. long, 48 mm. high, and 15 mm. thick. The front of the upper border is broken away. The hinder half of the border, and probably also the anterior half, articulated with the seventh costal. The upper face has an undulating surface, but only slight convexity. The sulcus between the ninth and the tenth marginals ascends a little in front of the middle of the

bone. The costomarginal sulcus runs near the upper border. The pit for the rib is rather small. In the free border is a deep notch. In front of this notch is an obtuse process of the border and behind it follows another less obtuse. To judge from this peripheral, there were two processes on the free border of each hinder peripheral.

The corresponding bone of *M. temmincki* differs in having only a single point or process on the free border, the one just in front of the end of the ascending sulcus.

From the materials at hand it appears that in *M. floridana* the distal ends of the costals were more closely connected with the peripherals and that the whole free border was less obtuse than in *M. temmincki.*

In case future discoveries should reveal the fact that two or more species are included in the bones here described the seventh right peripheral is to be taken as the type.

Terrapene canaliculata sp. nov.

FIGS. 5–7.

This species has as its type a lot of bones which belong to the U. S. National Museum. I am informed by Mr. J. W. Gidley of that museum that they were with and apparently belong to a lot of fossils of Pliocene or Pleistocene age that were collected probably previous to 1869, at Whitemarsh Island or Skedaway Island, Georgia, by Dr. J. P. Scriver. These islands lie southeast of Savannah. The bones have the catalogue number 8211. It is certain they were found in deposits near the coast, inasmuch as some of them are partly incrusted by worm tubes, bryozoa, and barnacles.

The shell only is represented. The fourth right peripheral presents its thicker portion. The region covered by the seventh and eighth right marginal scutes and parts of the second and third costals is represented by one fragment. Another fragment comes from the midline of the back, apparently including a part of the fifth neural. There are also portions of costals, all lacking the proximal end. Of the plastron there is the complete entoplastron and a considerable part of the left side of the hinder lobe. The individual had a size larger than that of any living box-tortoise. It was aged, for in many cases the sutures are wholly obliterated.

The fragment of the dorsal region extends 22 mm. on each side of the midline. It is crossed by part of one sulcus, probably that between the third and fourth vertebral scutes. From side to side the fragment is strongly concave and there is no trace of a median carina, so usual on the carapace of these animals. It is possible that it would appear farther in front and behind.

The fourth right peripheral (Fig. 5) is 26 mm. long; its anterior end (Fig. 5) 8 mm. thick; its hinder end (Fig. 5), approaching the lateral hinge, is 19 mm. thick. The sharp free border of the more anterior peripherals is continued on this fourth as a sharp keel, which forms the outer boundary of a sort of gutter running above the bridge. The width of the gutter varies from 4 mm. to 7 mm.

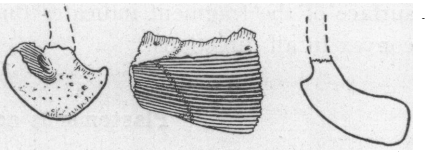


Fig. 5. *Terrapene canaliculata* Hay. Fourth right peripheral seen from without. On the right is a section of the front end; on the left, a section of the hinder end. × ⅔.

The fragment occupied by the seventh and eighth marginal scutes and parts of the second and third costal scutes (Fig. 6) has the sutures obliterated. The lower ends of the costal bones present are 5 mm. thick. The hinge line, of which there remains 30 mm., is 10 mm. thick. That of *T. putnami*, of about the same size, is 14 mm. thick. On the front end of the fragment there is a segment of the sulcus between the sixth and seventh marginals. The seventh is thus seen to have been 32 mm. long. Its height above the lateral carina varies from 21 mm. to 25 mm. Figure 6 presents a perpendicular section through this fragment taken near the right side.

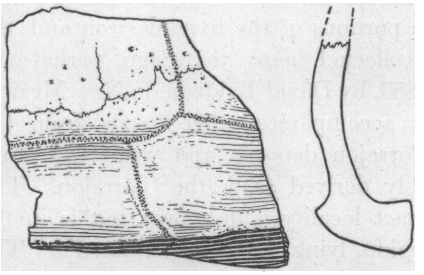


Fig. 6. *Terrapene canaliculata* Hay. Region of sixth and seventh marginal scutes, right side. On right is a section near front end of fragment. × ⅔.

After comparison with the shells of living species it is concluded that an interval of about 40 mm. is missing between the fourth peripheral and the one just described. This makes the length of the hinge-line about 70 mm.

The lower end of a costal bone, probably the third, is 34 mm. wide and 4.3 mm. thick. Other costals are 6 mm. thick.

The entoplastron (Fig. 7) is subcircular, 34 mm. long, and 37 mm. wide. At the end of the hyoepiplastral suture the thickness is 7 mm. The gular scutes overlapped somewhat the anterior end, while the pectorals extended forward on the hinder end.

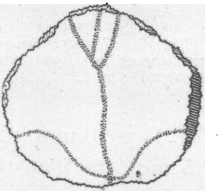


Fig. 7. *Terrapene canaliculata* Hay. Entoplastron. × ⅔.

The border of the hinder lobe thickens rapidly from the free edge, at-

taining at a short distance behind the hinge a thickness of 13.5 mm. At the femoroanal sulcus the thickness is 10.5 mm. There is no emargination of the free border where it is crossed by the femoroanal sulcus. The inferior surface of the fragment indicates that the hinder lobe was rather strongly convex in all directions.

Plastomenus acupictus sp. nov.

PLATE LIV, FIGS. 1–3, AND TEXT-FIG. 8.

The somewhat scanty remains that constitute the type of this species were recently found in some neglected materials of the Cope collection. The most important parts belong to the left side of the animal. There are, first, parts of two costals, probably the third and fourth, but possibly the second and the third; also the proximal half of the sixth costal and the whole of the seventh; finally, considerable portions of the hypoplastron and the xiphiplastron. The specimen was collected many years ago, perhaps in 1883, by David Baldwin, in New Mexico. It accompanies other fossils from the Torrejon deposits and was itself probably derived from the Torrejon. The exact locality is unknown, but is in the region lying north of Santa Fé. The specimen bears the catalogue number 1025 of the American Museum of Natural History.

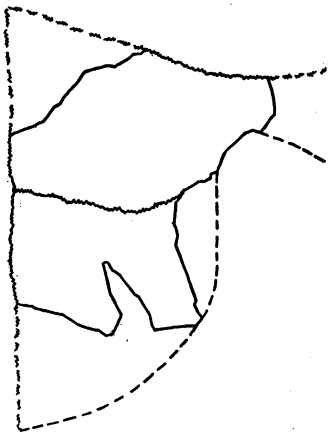


Fig. 8. *Plastomenus acupictus* Hay. Portions of left hypoplastron and xiphiplastron. × 1.

That the species belongs to *Plastomenus* is shown by the fact that the hypoplastron and the xiphiplastron were both suturally joined to their fellow bones as far as represented by the specimen; that is, along 8 mm. of the hinder part of the hypoplastron and 16 mm. of the anterior portion of the xiphiplastron.

The supposed third costal (Plate LIV, Fig. 1) is 10 mm. wide proximally, 3 mm. thick along the neural border, and 2.5 mm. thick on the sutural edge at a distance of 13 mm. from the neural border. The seventh costal (Plate LIV, Fig. 2) is, at the distal end, 16 mm. wide, 3 mm. thick where it joined the contiguous costals, and 4.5 mm. thick through the ridge formed by the rib. Each eighth costal (Plate LIV, Fig. 2) must have had a fore and aft extent of about 23 mm. and a lateral extent of close to the same amount.

The free border of the costals is beveled off on the upper side. A fragment of the nuchal shows that its free border was similarly beveled.

On the hinder costals are seen six or seven welts which run backward and somewhat outward. The whole upper surface of the shell, except the beveled border, is ornamented with small pits and narrow intervening ridges. There are five of the pits in as many millimeters.

The hypoplastron and the xiphiplastron measure 27 mm. along their common suture. The width of the hinder lobe (Plate LIV, Fig. 3, and Text-fig. 8) was close to 60 mm. At the bridge the hypoplastron is only 8 mm. wide, while it is 5 mm. thick. The sutural border of the bone in this region is concave. The antero-inner angle of this bone and that portion beyond the bridge are missing; as is also the hinder end of the xiphiplastron. At a distance of 18 mm. behind its anterior end the free border of the xiphiplastron is preserved for a short distance. It is there thin and acute.

The sculpture of the xiphiplastron resembles that of the carapace, but there are no welts and the pits are somewhat smaller.

Aspideretes singularis sp. nov.

PLATE LIV, FIG. 4, AND TEXT-FIGS. 9–17.

The type of the present species belongs to the American Museum of Natural History and has the catalogue number 1028. The specimen is beautifully preserved and furnishes the nearly complete skeleton. It was collected for Professor E. D. Cope by David Baldwin, in 1883, in the Torrejon beds, the upper division of the Puerco formation, of the Basal Eocene. The locality is recorded as having been the Chaco Cañon, in the southern part of San Juan County, New Mexico. Only one other skull belonging to the Trionychoidea is at present known that is older, that of *Conchochelys admirabilis*, of the Lower Puerco; no other trionychoid skull so old is known that is accompanied by the shell. The specimen is therefore interesting because it shows how little change has taken place in the group since Basal Eocene times.

The carapace (Fig. 9) is elliptical and appears to have been rather convex, but this convexity has been considerably increased during fossilization. The length is 350 mm. in a straight line; the width of the disk appears not to have exceeded 280 mm. The carapace is composed of the nuchal, a preneural, seven neurals, and eight pairs of costals.

The nuchal has a lateral extent of 190 mm.; a fore and aft extent of 37 mm. The outer ends of the bone are smooth; the median portion is pitted.

The outer ends of the nuchal overlap strongly the projecting ends of the ribs of the costals of the first pair. The following are the dimensions in millimeters of the other median bones:

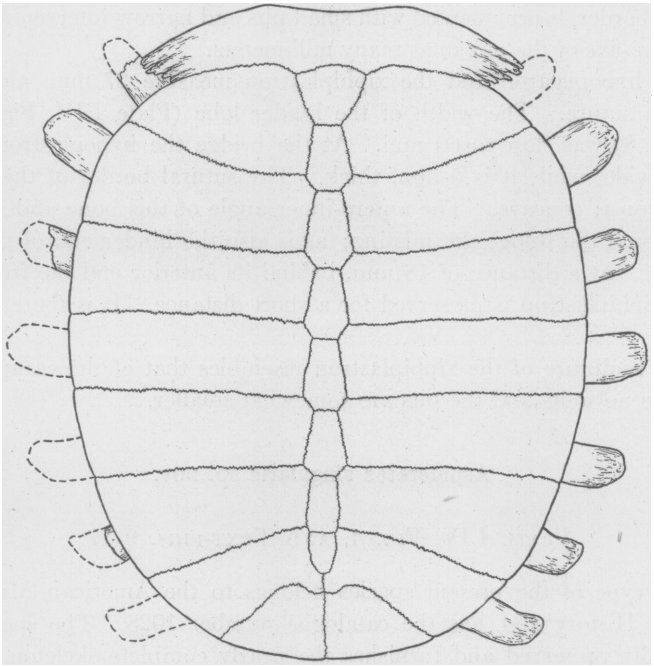


Fig. 9. *Aspideretes singularis* Hay. Carapace of type. No. 1028, A. M. N. H. × ½.

Element		Length	Width
Preneural		34	42
Neural	1	34	27
	2	38	27
	3	42	25
	4	38	24
	5	35	23
	6	31	19
	7	24	16

The costals of the eighth pair join on the midline and extend laterally each 60 mm. The free borders of the carapace are beveled off and are smooth. The ends of the ribs extend beyond the borders of the disk about 50 mm. and vary in width from 25 mm. to 33 mm.

The sculpture (Plate LIV, Fig. 4) consists of pits with prominent intervening ridges. On the neurals and the proximal ends of the costals the pits

are nearly circular and there are from six to eight in a line 20 mm. long. Toward the distal ends of the costals the pits increase in size. On the distal fourth of the costals the pits are arranged in longitudinal rows, with broad ridges between the rows. In some places there are only three or four rows in a 20 mm. line. On the rear of the carapace the pits are of size larger than the average.

All portions of the plastron (Fig. 10) are present. The entoplastron has the usual V-shape, with the limbs each 112 mm. long. The epiplastra are 18

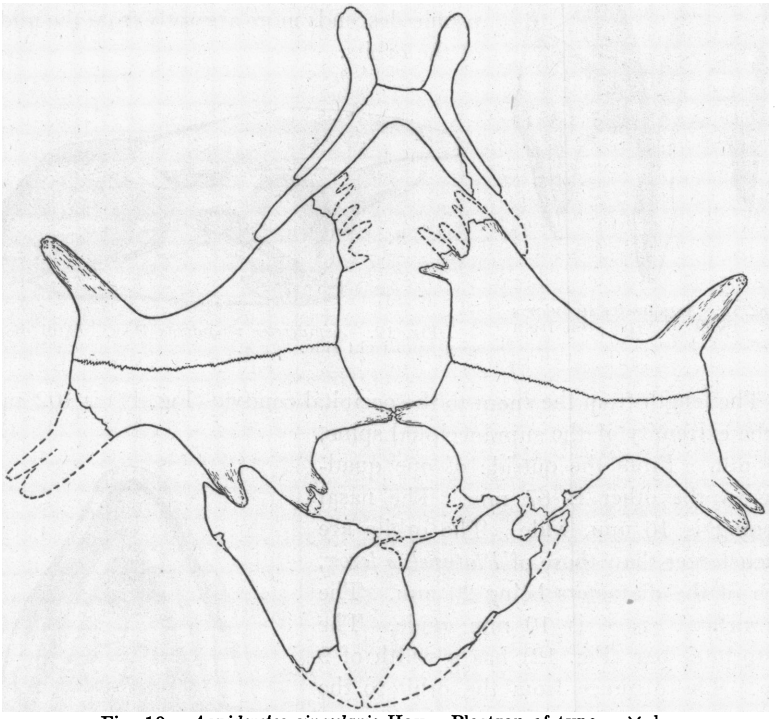


Fig. 10. *Aspideretes singularis* Hay. Plastron of type. × ½.

mm. broad in front, pointed behind, and about 100 mm. long. The bridge has a width of 56 mm. equally divided between the hyoplastron and the hypoplastron. The whole extent of the inner border of the hyoplastron and the hypoplastron taken together is at least 175 mm. The xiphiplastron is of triangular form, with the proximal processes interdigitated with the processes of the hypoplastron. Each is about 110 mm. long and 75 mm. wide. With the exception of the anterior and posterior processes the whole lower surface of each xiphiplastron is sculptured.

The sculpture of the plastron is less prominent than that of the carapace. It consists of vermicular ridges occasionally anastomosing and enclosing pits and furrows. Toward the midline the ridges are inconspicuous.

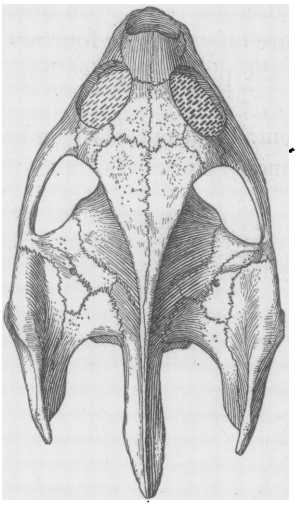


Fig. 11. *Aspideretes singularis* Hay. Skull of type seen from above. × ½

The skull is nearly complete and is but little distorted. Some of the distortion has been corrected in the figure. The skull resembles closely that of *Platypeltis ferox*, but the profile descends more abruptly from the middle of the orbits.

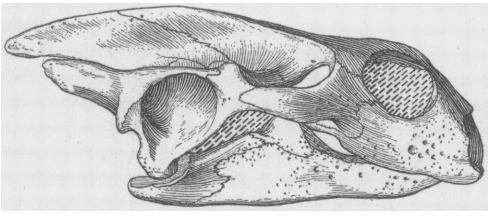


Fig. 12. *Aspideretes singularis* Hay. Skull of type seen from right side. × ½.

The length from the snout to the occipital condyle (Fig. 11) is 102 mm.; to the extremity of the supraoccipital spine, 131 mm. From the outside of one quadrate to the other is 67 mm. The nasal opening is 16 mm. wide. The orbits are much larger than those of *Platypeltis ferox*, each of the diameters being 20 mm. The interorbital space is 10 mm. wide. The postorbital bar (Fig. 12) has a width of 9 mm. The distance from the orbit to the front of the auditory chamber is 40 mm. The latter has a horizontal diameter of 21 mm.

The roof of the mouth (Fig. 13) is almost wholly concealed by the lower jaw and the bones of the tongue. It is seen, however, that the front of each choana is placed 25 mm. behind the tip of the snout. Nothing can be determined regarding the nature of the triturating surfaces of the jaws.

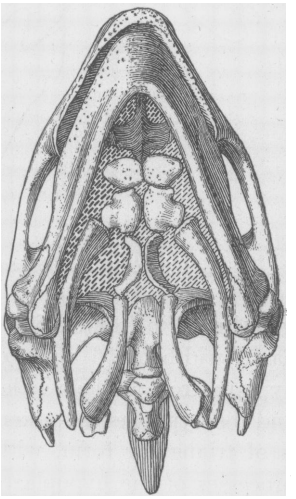


Fig. 13. *Aspideretes singularis* Hay. Skull of type seen from below. × ½.

The length of the lower jaw from the front to the angle is 84 mm. The length of the symphysis is 17 mm. The height of the jaw at the coronoid is 28 mm.

The hyoid bones are completely preserved, except, perhaps, the ceratohyals; but these small bones may yet be buried in the matrix. There are present a pair of basihyals and two pairs of basibranchials. The more anterior basibranchials are each 72 mm. long; those of the hinder pair, 37 mm. long.

The atlas has the structure found in *Platypeltis*. The two pieces of the neural arch and the hypocentrum form the cup receiving the occipital condyle. Behind these bones comes the true centrum, or odontoid bone.

The body of the scapula (Fig. 14) is 130 mm. long, including the glenoid cavity. The maximum diameter of this cavity is 33 mm. The procoracoid process is 86 mm. long. It expands distally to a width of 32 mm. The coracoid is 137 mm. long, measuring from the glenoid cavity. From its base it expands rapidly to a width of about 35 mm.

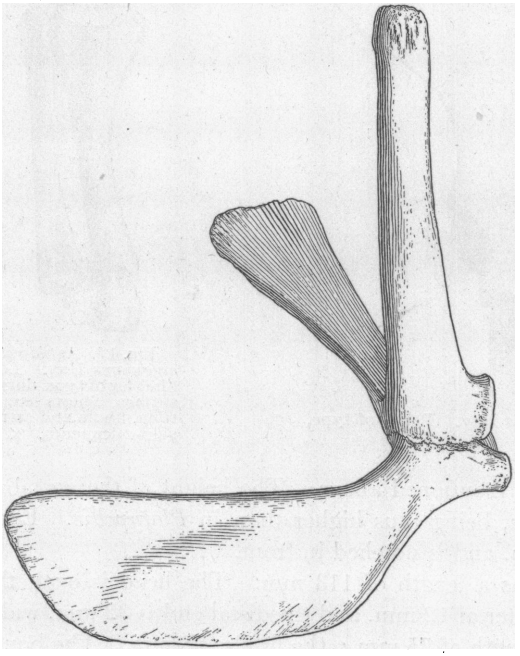


Fig. 14. *Aspideretes singularis* Hay. Right scapula and coracoid of type. × ½.

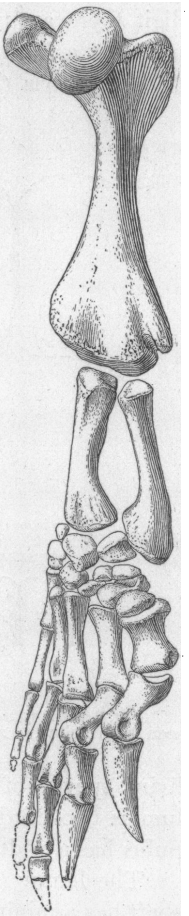


Fig. 15. *Aspideretes singularis* Hay. Right fore leg of type, dorsal surface. × ½.

The length of the humerus (Fig. 15), from the proximal surface of the head to the distal end, is 101 mm. The least diameter of the shaft is 12 mm. The width of the distal end is 36 mm. The ulna is 43 mm. long, being relatively shorter, when compared with the humerus, than the same bone in *Platypeltis spinifera*. The radius is 49 mm. long. The bones of the carpus are as in the modern members of the family, there being *radiale, ulnare, intermedium, pisiforme, centrale,* and five distal carpals. The length of the first digit is 68 mm. Only the first and the second phalanges of the fourth digit are preserved, so that it is impossible to say whether or not there were more than three altogether. Of the fifth digit there are present three phalanges, and there was probably a fourth.

The pelvis (Fig. 16) resembles closely that of the

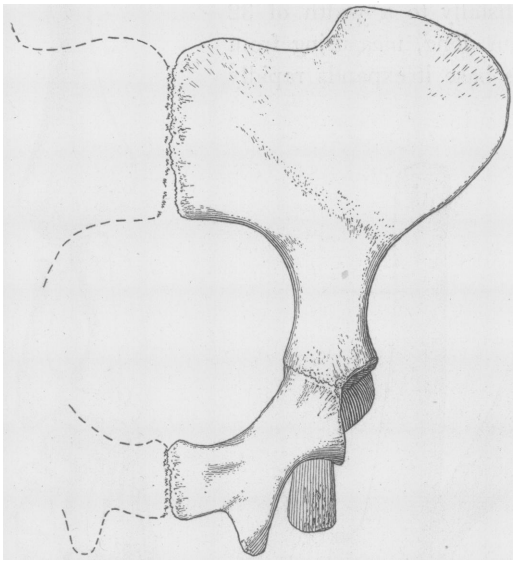


Fig. 16. *Aspideretes singularis* Hay. Pelvis of type, seen from below. × ½.

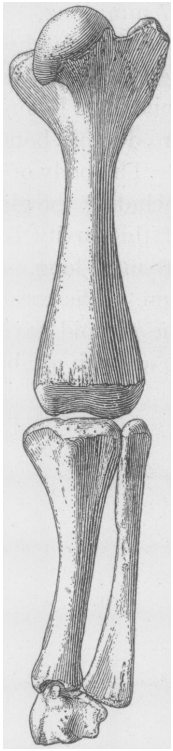


Fig. 17. *Aspideretes singularis* Hay. Left hind leg of type, dorsal surface. Shows femur, tibia, fibula, and astragalo-calcaneum. × ½.

living species of trionychid mentioned above. The height of the acetabulum is two-thirds its length, being thus higher than in *Platypeltis*. Each pubis has a width of 88 mm. and is notched in front.

The femur (Fig. 17) has a length of 113 mm. The head is oval, the shaft has a minimum diameter of 12 mm. and the distal end is 32 mm. wide. The tibia has an extreme length of 75 mm.; the fibula, 78 mm. The bones

of the ankle do not differ in form or structure from those of living forms of the family. Only the bases of the metatarsals have been preserved. They present nothing worthy of record.

Platypeltis antiqua sp. nov.

FIG. 18.

The Cope collection of fossil reptiles has recently afforded a specimen of trionychid to which the above name is given. This specimen, No. 1036 of the American Museum of Natural History, appears to have been collected by Mr. D. Baldwin, in 1883, in probably San Juan County, New Mexico. It was derived from Torrejon deposits. It presents wholes or portions of the costals of five pairs, five neural bones, some limb bones, and apparently

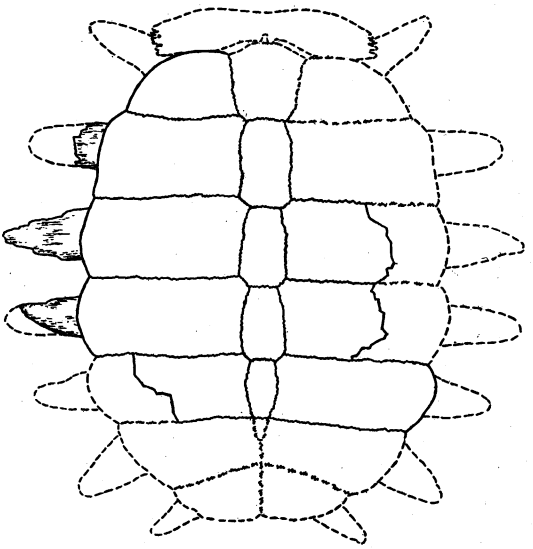


Fig. 18. *Platypeltis antiqua* Hay. Carapace of type. No. 1036, A. M. N. H. × ⅛.

a portion of the plastron. The limbs and the plastral bones are imbedded in such a hard matrix that no attempt has been made to remove it. In the text-figure (Fig. 18) restored portions are enclosed by interrupted lines.

The most anterior piece of bone is regarded as the left first costal. It is 20 mm. long from side to side, 13 mm. fore and aft. Its outer and anterior borders are smooth and the anterior was not articulated suturally with any bone in front. That this bone was not the nuchal appears to be

shown by the fact that the inner anterior angle of the next bone behind is truncated, as if by a neural in front of its own. Moreover, the mesial border of the bone in question is a sutural border for union with a neural. Having no jagged sutural border in front it can not be the second costal. It is therefore evidently the first costal. The nuchal is missing and must have been, as in *P. serialis,* only loosely joined to the first neural and costals. It is restored from that of *Platypeltis spinifera.*

The line stretching across the five costals present on the left side is 75 mm. long. The length of the carapace was therefore about 100 mm. The width of the disk was 78 mm.; but the ribs extended beyond this at least 18 mm. Evidently the carapace was relatively shorter and broader than that of *P. serialis.*

That there were only seven pairs of costals is concluded from the fact that the outer border of the fifth costal is directed so strongly inward that the seventh costal must have been very short, leaving no room for the eighth costals.

The hinder portion of the first neural is present. There is no trace of a preneural. Therefore, the genus *Platypeltis* is indicated. The following are the dimensions (in millimeters) of the neurals measurable:

Neural	Length	Width
2	14	10
3	16	9
4	15	8
5	12	6

It is probable that the first neural was not so wide as it is represented in the figure. It it also probable that there was a small sixth neural. The neurals are from 2.5 mm. to 3 mm. thick.

The surface of the carapace presents no welts, but is everywhere pitted. Of the pits there are, at the proximal ends of the costals and on the neurals, six in a line 10 mm. long; on the outer ends of the costals, five in a line 10 mm. long.

This species differs from *P. serialis,* of the Wasatch and Bridger, in having no welts on the upper surface and in having smaller pits. From *P. trionychoides* of the Bridger, it differs in having coarser pits, as well as in other respects.

Platypeltis amnicola sp. nov.

PLATE LIV, FIGS. 5, 6, AND TEXT-FIG. 19.

This specific name is applied to an incomplete and fragmentary shell which was collected in 1906 by the American Museum's expedition into the Wasatch beds of southwestern Wyoming. The specimen consists of two

neurals and a part of a third, enough fragments to constitute apparently nearly the whole of the costals, but which have not yet been put together, most of the hyoplastron and hypoplastron of the left side, and the inner ends of those of the right side. The specimen was found on Bitter Creek and has the catalogue number 6044.

The carapace had apparently a length of about 280 mm., and a width of about 200 mm.; but the ratio of the width to the length may have been greater. The costals resemble in thickness and sculpture those of *Platypeltis heteroglypta,* and it is possible but not probable that the individual belongs to that species. However, the thickness of the costals, at the outer ends at least, appears to be less, being 5 mm. or less at the sutural border,

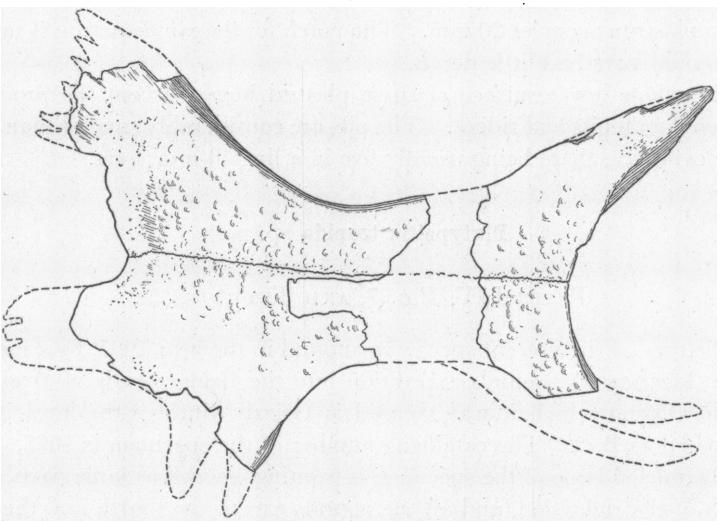


Fig. 19. *Platypeltis amnicola* Hay. Left hyoplastron and hypoplastron of type. No. 6044, A. M. N. H. Partly restored. × ½.

from 7 mm. to 9 mm. through the rib. At the neural border the thickness is 7 mm. One costal is 46 mm. wide at the distal end; another, apparently the right fifth (Plate LIV, Fig. 6), is 41 mm. wide distally. The left sixth is 36 mm. wide distally. The right eighth is present, slightly damaged. Evidently it was enclosed in a notch in the seventh. It is 25 mm. long, fore and aft; the width was slightly greater. The free borders of the costals are beveled off obliquely. What is regarded as the third neural (Plate LIV, Fig. 5) has a length of 36 mm., a width of 25 mm. at the hinder end, and a thickness of 6 mm.

The sculpture consists of pits surrounded by walls with rounded summits. Near the free borders of the shell (Plate LIV, Fig. 6) the pits are arranged

somewhat in rows parallel with the border. Toward the proximal ends of the costals the pits become larger, apparently by the coalescence of the smaller pits. Of the smaller pits there are six or seven in a line 20 mm. long. The pits near the neural borders of the costals and on the neurals (Plate LIV, Fig. 5) may be two or three times as large, and are arranged irregularly.

What appears to be the right outer end of the nuchal is present. Differently from *P. heteroglypta*, the sculptured layer seems to have extended to the end of the bone.

Of the left hyoplastron and hypoplastron a portion across the bridge is missing. The length of the suture between the two bones appears to have been about 120 mm. Where narrowest the bridge was 45 mm. wide, and here the bones are about 13 mm. in thickness. Of the width of the bridge the hyoplastron occupies 20 mm. The notch for the xiphiplastron is missing but it could have had little depth.

The whole lower surface of these plastral bones, except the processes, is covered with pits and ridges. The pits are considerably smaller than those of the carapace, there being usually five in a line 10 mm. long.

Platypeltis trepida sp. nov.

PLATE LIV, FIG. 7, AND TEXT-FIG. 20.

The type of the present species was found in the year 1905, by a member of the American Museum's expedition into the Bridger beds of Wyoming. The locality at which it was secured is Grizzly Buttes; the level is that designated as B, 2. The catalogue number of the specimen is 5925.

The nuchal bone of the specimen is wanting, as well as large parts of the costals of the right side, and all the neurals except the fourth and the fifth. On the left side most of the sixth costal and all of the seventh are wanting. In the figure those bones and parts of bones present are enclosed by solid lines; the restored parts by interrupted lines.

The individual (Fig. 20) was a small one, the total length having originally been about 100 mm. The distance from the anterior border of the first costal to the hinder border of the fifth at its outer end is 77 mm. The breadth of the disk is 92 mm. Beyond the free border the ribs extended at least 15 mm.

The fourth neural is 11 mm. long and 9 mm. wide; the fifth is 10 mm. long and 8 mm. wide. Each of these has a low but distinct median keel. The costals are thin, the thickness being 2 mm. or less. The first is 16 mm. wide; the second is 12 mm. wide at the proximal end. The anterior border of the first shows that it was united to the nuchal bone by a jagged suture.

The costals are traversed by a number of longitudinal ridges which are

but little more conspicuous than the other ridges between the pits. The pits are mostly in rows parallel with the more conspicuous ridges. Of the pits there are from five to seven in a line 10 mm. long. Those on the outer ends of the costals are somewhat the larger.

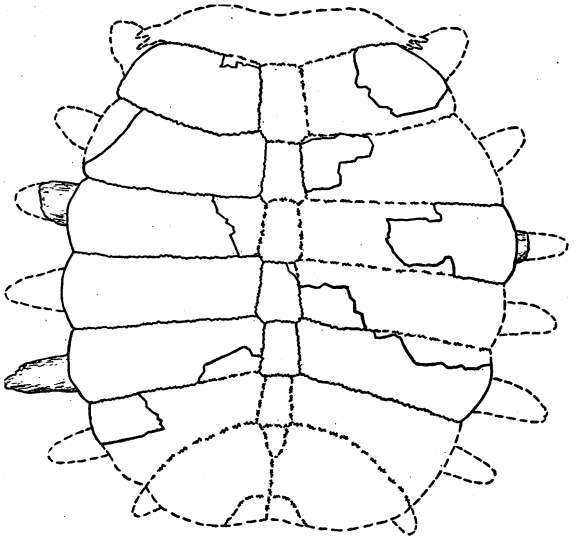


Fig. 20. *Platypeltis trepida* Hay. Carapace of type. No. 5925, A. M. N. H. Partly restored. × ⅔.

This species differs from the specimens referred to *Platypeltis serialis* (*Plastomenus serialis* Cope) in the closer union of the nuchal and first costal, in the presence of a keel on at least some of the neurals, and in the finer sculpture of the carapace.

EXPLANATION OF PLATE LIV.

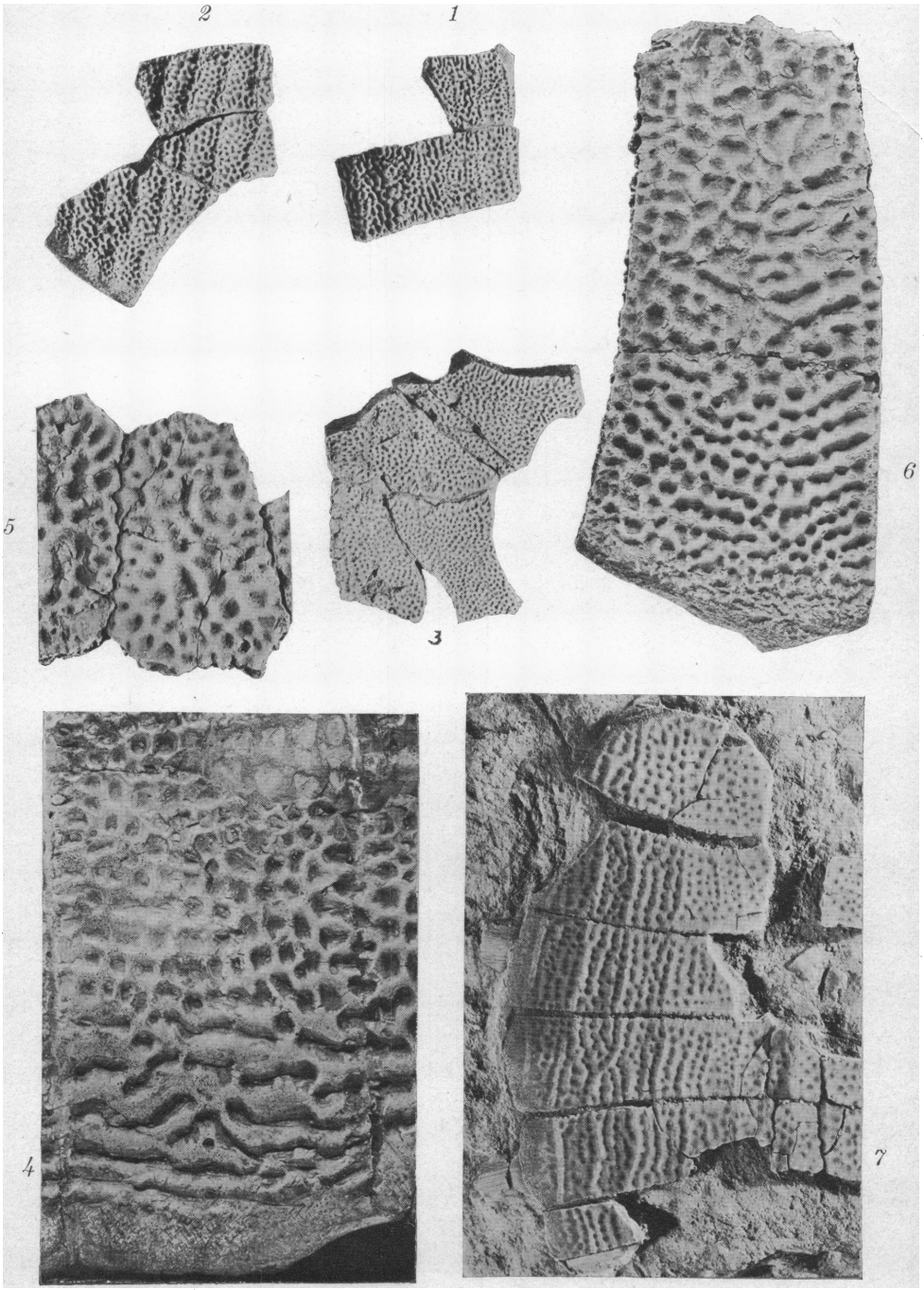
All of the figures are of the size of nature and are presented to illustrate the details of the sculpture.

Figs. 1–3. *Plastomenus acupictus* Hay.
Fig. 1. Portions of two anterior costal bones.
Fig. 2. Portion of sixth and whole of seventh left costals.
Fig. 3. Left hypoplastron and xiphiplastron.

Fig. 4. *Aspideretes singularis* Hay. Distal end of fourth left costal.

Figs. 5, 6. *Platypeltis amnicola* Hay.
Fig. 5. Supposed third neural, with contiguous ends of costals.
Fig. 6. Supposed right fifth costal.

Fig. 7. *Platypeltis trepida* Hay. Median and left portions of the carapace.



FOSSIL TURTLES.